# 1982 SUMMARY

## MILL CHARACTERISTICS

### Primary Operations

Only sawmills that were primary processors of roundwood were included in this survey. However, data on nonroundwood consumed by these mills (peeler cores and cants) were also gathered and included (Table 18).

### Size-Class

There were 169 sawmills operating in 1982. They are classified by size-class based on the maximum production for a single 8-hour shift.

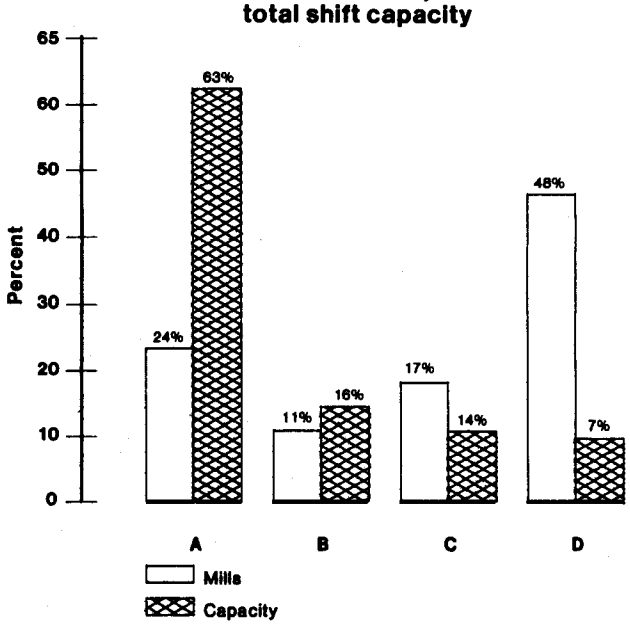
| Mill size-class | Capacity per single 8-hour shift |
|---|---|
| | (MBF Lumber Tally) |
| A | 120+ |
| B | 80-119 |
| C | 40-79 |
| D | less than 40 |

The 169 sawmills operating in 1982 represent a decrease of 39 from the mills reported in 1980. The distribution of all mills by economic area, county and mill size-class is provided in Table 11. Since 1970, Snohomish County has had the most mills and continues to dominate with 21 mills. Clallam County follows with 14. Among the five Economic Areas, the Puget Sound Area leads with 55 mills. The Olympic Peninsula is second with 53 mills. Statewide the number of mills has decreased since 1980, as has the single shift capacity to 10,931 MBF representing an 8 percent decline.

### Production Capacity

The number of Class D capacity mills decreased by 35 and mill capacity declined by 36 percent since 1980. Class C mills again declined with the loss of one mill, a 3 percent decline, while capacity increased 4 percent. Class B mills decreased by 6 and mill capacity declined 19 percent. Class A mills increased by 3 to 42 mills while mill capacity increased 1 percent.

**Figure 6 Percent of sawmills by size-class and percent of total shift capacity**




### Equipment

Planers, barkers and chippers were used by more than half the sawmills during 1982 (Table 13). Only 5 percent of the mills had burners, while 37 percent operated kilns. The percent of mills having varied equipment is shown below:

| Equipment | Mill size-class A | B | C | D | All |
|---|---|---|---|---|---|
| | (Percent) | | | | |
| Planer | 81 | 89 | 82 | 28 | 57 |
| Chipper | 93 | 100 | 93 | 15 | 56 |
| Barker | 98 | 94 | 100 | 7 | 54 |
| Kiln | 67 | 78 | 39 | 9 | 36 |
| Burner | 2 | 0 | 14 | 5 | 5 |

Information on size and type of headrig is presented in Table 15. Circular saws are most numerous with 84. However, 83 band saws account for 75 percent of lumber produced by type of headrig (Table 35). The 19 chipping saws were next with 15 per-

cent, followed by circular saws with 5 percent and scragg saws with 4 percent. Band saws accounted for 71 percent of Class A production, 78 percent of Class B, 89 percent of Class C, and 38 percent of Class D (Table 34).

### Site and Ownership Tenure

Site and ownership tenure by mill size-class are cross-tabulated in Table 16. The data shows that size-class D mills have shorter site occupancy than larger mills. This is partially because some size-class D mills are portable and moved from site to site.

| Mill size-class | Over 10 Years: Under present ownership | Over 10 Years: At present site |
|---|---|---|
| | (Percent) | |
| A | 57 | 86 |
| B | 56 | 83 |
| C | 48 | 70 |
| D | 46 | 50 |
| All mills | 50 | 66 |

### Operating Days

The normal 5-day work week results in about 250 potential operating days per year. In 1982, the average ranged from a low of 61 days for size-class D mills in the Inland Empire to a high of 223 days for size-class C in the Lower Columbia Area (Table 17).

| Mill size-class | Average days of operation 1982 | Percent increase/ decrease from 1980 |
|---|---|---|
| A | 186 | -11 |
| B | 197 | -12 |
| C | 185 | -11 |
| D | 113 | +2 |
| All mills | 153 | -2 |

## WOOD CONSUMPTION

### Raw Materials

This survey only includes mills that consume roundwood logs. Resaw and planing mills were not included. However, 6.6 million board feet of wood consumed by the mills surveyed were not in log form but were either from peeler cores or cants. Ninety-two percent of the logs consumed were sound and 8 percent were utility grade (Table 18).

### Roundwood Age

Nearly two-thirds of logs consumed by sawmills during 1982 were classified young growth timber (less than 100 years old). This is a continuation of the trend to young growth which was interrupted because of timber salvage following the 1980 volcanic eruption of Mount St. Helens.

| Economic Area | Mill size-class†: A | B&C | D | All mills |
|---|---|---|---|---|
| | (Young growth percent) | | | |
| Puget Sound | 68 | 87 | 79 | 72 |
| Olympia Peninsula | 61 | 83 | 49 | 66 |
| Lower Columbia | † | 59† | 45 | 59 |
| Central Washington | 39 | 71† | 41† | 54 |
| Inland Empire | † | 59† | 69 | 59 |
| Total state | 62† | 67† | 58† | 64 |

†Refer to Table 19 for size-class combinations.

Consumption by timber age, Economic Area, county and mill size-class is provided in Tables 19 and 20.

The data shows the consumption of young growth in the Lower Columbia and Central Washington Areas has risen substantially since the 1980 Survey. This is because the timber salvage following the Mount St. Helens' eruption had been essentially completed by 1982.

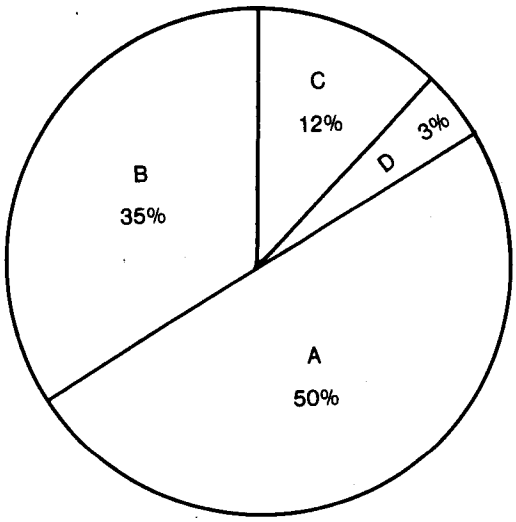
## Ownership

Sawmills relied on public timberlands for 38 percent of their logs (Table 22).

| Ownership | | Log supply |
|---|---|---|
| | | (Percent) |
| State | | 7 |
| National Forest | | 27 |
| Bureau of Land Management | | † |
| Other public | | 4 |
| Total public | | 38 |
| Forest Industry | Own wood supply | 40 |
| | Other wood supply | 12 |
| Farmer & Misc. private | | 10 |
| Total private | | 62 |
| All owners | | 100 |

†Less than 0.5 present

**Figure 7 Sawmill log consumption by mill size-class (Table 18)**




A breakdown of ownership sources by mill size-class shows size-class A mills were more dependent on public timber.

| Mill size-class† | Forest industry: Own wood supply | Forest industry: Other wood supply | All public |
|---|---|---|---|
| | | (Percent) | |
| A | 43 | 7 | 44 |
| B | 41 | 14 | 34 |
| C | 35 | 25 | 24 |
| D | 2 | 35 | 32 |
| All mills | 40 | 12 | 38 |

†Refer to Table 22 for size-class combinations

Public timberlands supplied Central Washington, Inland Empire and Olympic Peninsula Area sawmills with 70, 35 and 44 percent of their logs, respectively (Table 22). Comparable figures for Puget Sound and Lower Columbia Area Mills are 33 and 21 percent.

Ninety-three percent of sawmills more than two-thirds dependent on Farmer and Miscellaneous Private ownership are size-class D mills. Dependency data are useful in evaluating the effects of timber supply policies on the industry (Table 24).

| Ownership | | Mills more than two-thirds dependent on a single type of ownership |
|---|---|---|
| | | (Percent) |
| State | | 18 |
| National Forest | | 2 |
| Bureau of Land Management | | — |
| Other public | | 1 |
| Total public | | 21 |
| Forest Industry | Own wood supply | 11 |
| | Other wood supply | 7 |
| Farmer & Misc. private | | 34 |
| Total private | | 52 |
| All owners | | 73 |

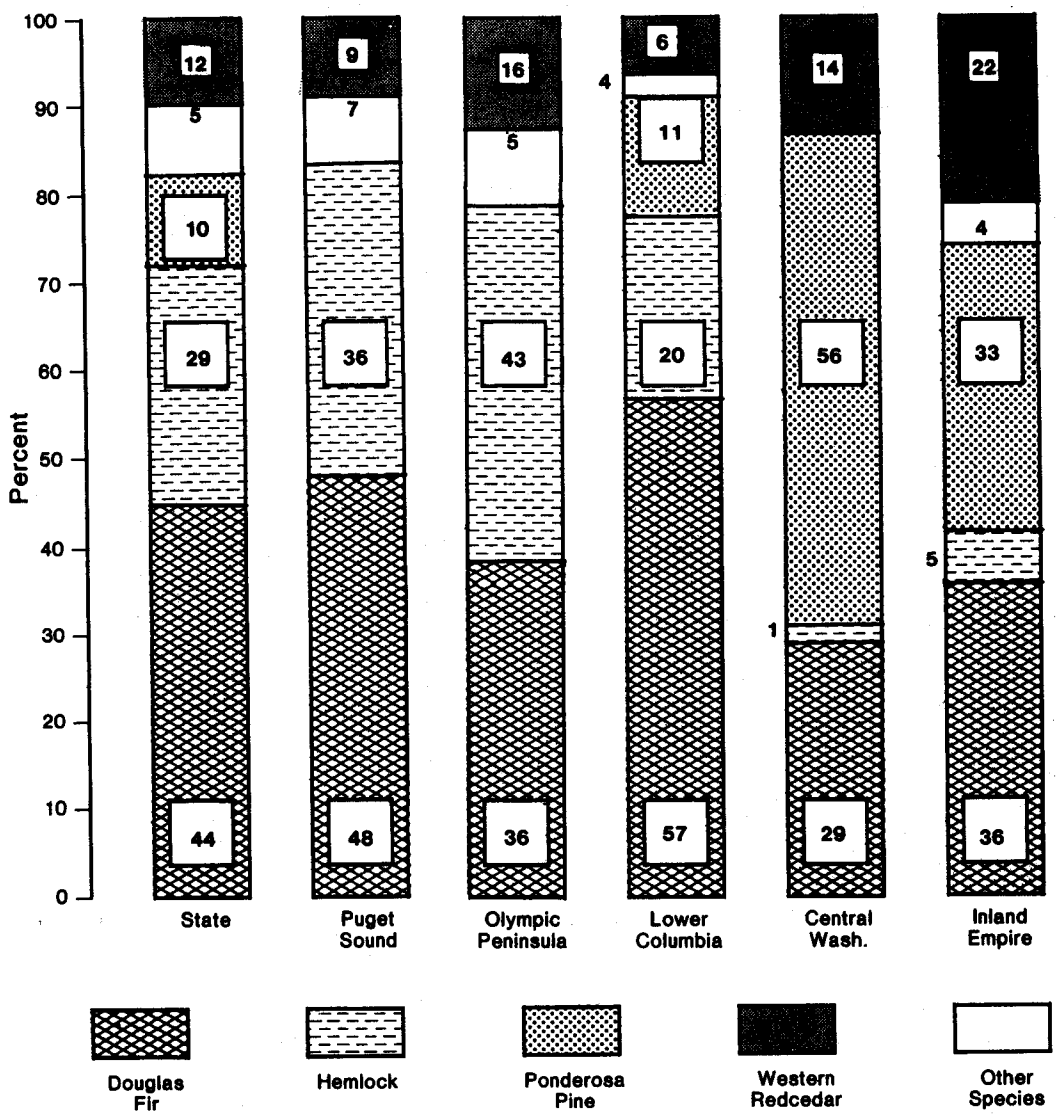
## Species

During 1982 sawmills used 44 percent Douglas fir logs and 29 percent hemlock logs (Table 25). Figure 8 illustrates species variation by Economic Area.

The two leading species consumed in each Economic Area were:

- Puget Sound - Douglas fir, hemlock
- Olympic - hemlock, Douglas fir
- Lower Columbia - Douglas fir, hemlock
- Central Washington - ponderosa pine, Douglas fir
- Inland Empire - Douglas fir, ponderosa pine

**Figure 8 Sawmill log consumption by species and area**




### Minimum Log Diameter

Over one-third of the mills in the state accepted small diameter logs in 1982. The Lower Columbia Area had a 31 percent decline. All other areas had an increase.

| Ecomomic Area | Mills accepting logs with small-end diameters under 6 inches (Percent) |
|---|---|
| Puget Sound | 40 |
| Olympic Peninsula | 32 |
| Lower Columbia | 22 |
| Central Washington | 36 |
| Inland Empire | 46 |
| Total state | 36 |

### Imports

Washington timberlands supplied over 95 percent of the logs consumed; almost 3 percent came from Oregon. The remainder came mainly from Idaho and British Columbia (Table 3).

## PRODUCTION

### Lumber

Sawmills in Washington produced 2.8 billion board feet of lumber during 1982. Lumber produced by the 169 primary sawmills surveyed was 30 percent rough and 54 percent green (Table 33.

| Economic area | Lumber production |
|---|---|
| | (Percent) |
| Puget Sound | 29 |
| Olympic Peninsula | 30 |
| Lower Columbia | 24 |
| Central Washington | 9 |
| Inland Empire | 8 |
| Total state | 100 |

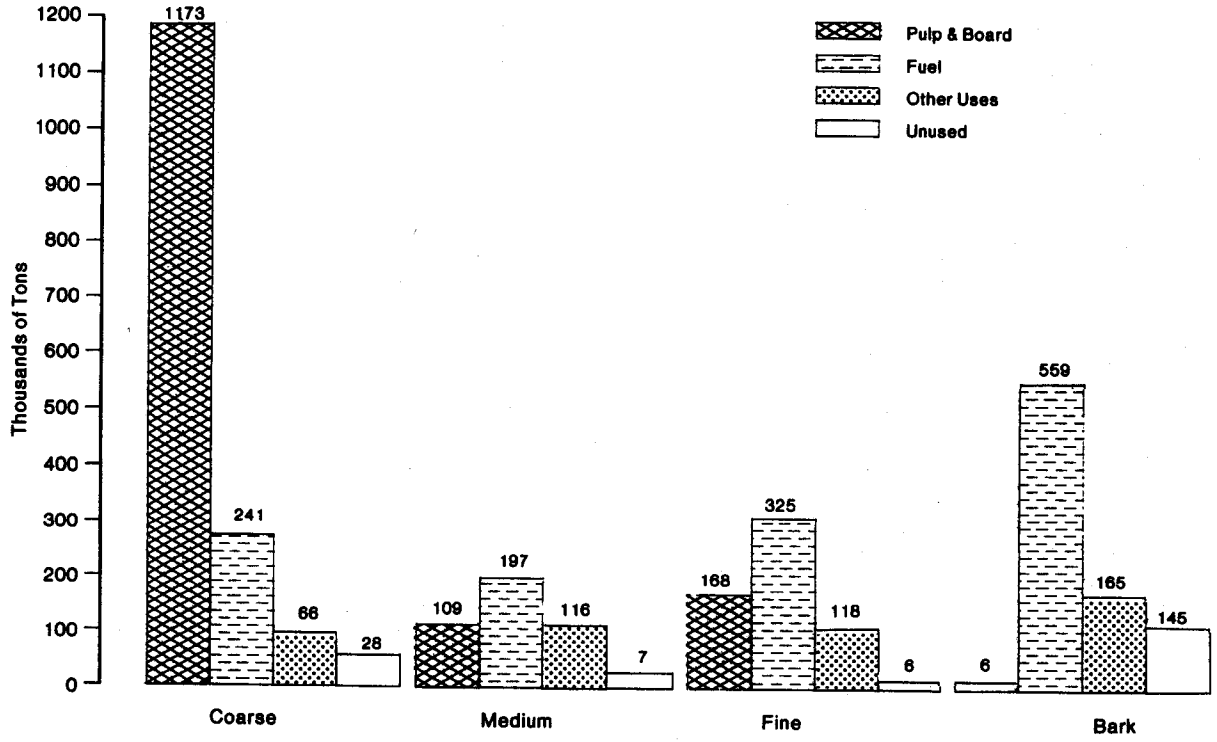
## Residues

Lumber production of 2.8 billion board feet resulted in 3.3 million tons of residue (Table 30). Bark accounted for 23 percent of the total while wood was the balance. The wood residues are classified in 3 categories: coarse (slabs, edgings, trim and spur ends); medium (shavings); and fine (sawdust) shown in Table 28. These wood residues made up 2.6 million tons of the total, or 0.9 tons for every 1,000 board feet of lumber produced.

Residue uses include raw material for the Pulp and Board Industry, fuel for industry and community, animal bedding, gardening, landscaping and mulch. These and other uses consumed 98 percent of all residues produced by sawmills (Figure 9).

Unused residue was generally burned (but not as a source of fuel), left in the woods (by portable mills), or dumped near the mill site.

**Figure 9 Type and disposition of sawmill residues**




| Mill size-class | Wood residue use: Pulp & board | Fuel | Other uses | Unused |
|---|---|---|---|---|
| | (Percent) | | | |
| A | 52 | 31 | 16 | 1 |
| B† | 67 | 26 | 7 | <.5 |
| C | 57 | 30 | 7 | 6 |
| D†† | 14 | 53 | 17 | 16 |
| All mills | 57 | 30 | 11 | 2 |

†Class B includes Class A for Inland Empire and Central Washington

††Class D includes Class C for Lower Columbia

| Mill size-class | Bark residue use: Pulp & board | Fuel | Other uses | Unused |
|---|---|---|---|---|
| | (Percent) | | | |
| A | — | 70 | 30 | — |
| B† | 1 | 88 | 8 | 3 |
| C | 3 | 66 | 31 | <.5 |
| D†† | 3 | 51 | 21 | 25 |
| All mills | 1 | 75 | 22 | 2 |

†Class B includes Class A for Inland Empire and Central Washington

††Class D includes Class C for Lower Columbia

# VENEER and PLYWOOD INDUSTRY

## MILL CHARACTERISTICS

### Facilities

The 27 veneer and plywood mills surveyed were distributed throughout the Economic Areas and in 16 of the 39 counties. All but 3 of the mills were located in Western Washington (Table 36). Grays Harbor County had a total of 4 mills. The Olympic Peninsula led with 12 mills.

### Production Capacity

Table 37 shows the production capacity per shift for each type of mill by county.

| Economic area | Average shift capacity per mill† MSF ⅜" basis |
|---|---|
| Puget Sound | 169 |
| Olympic Peninsula | 152 |
| Lower Columbia | 199 |
| Central Columbia | 193 |
| Inland Empire | 160 |
| Total state | 168 |

†Excludes veneer capacity within a veneer and layup plant, but includes layup and veneer-only, and layup-only operations

Veneer-only mills had a lower average shift capacity than other types of mills.

| Mill type | Average shift capacity MSF ⅜" basis | Number of mills |
|---|---|---|
| Veneer & layup† | 172 | 15 |
| Veneer-only | 144 | 7 |
| Layup-only | 192 | 5 |
| All types | 168 | 27 |

†Excludes veneer capacity within a veneer and layup plant

### Equipment

Tables 38 and 39 present statistics on log use relative to lathe diameter limits and size of cores produced. Half the mills could handle logs 5 feet or larger in diameter. One mill could peel to a 5-inch core diameter while 5 mills produced cores that fell in the 11+ inches category. The other 16 mills with peeling operations are in the 6- to 10-inch core diameter range.

About half of the core material was used as a source of chips for the Pulp Industry and most of the remainder for other purposes such as lumber, fuel and posts. Twenty of the mills used veneer chippers during 1982 while only one mill used a burner (Table 40).

### Site and Ownership Tenure

All mills have been at their present site and 85 percent under the same ownership for more than 10 years (Table 41).

### Operating Days

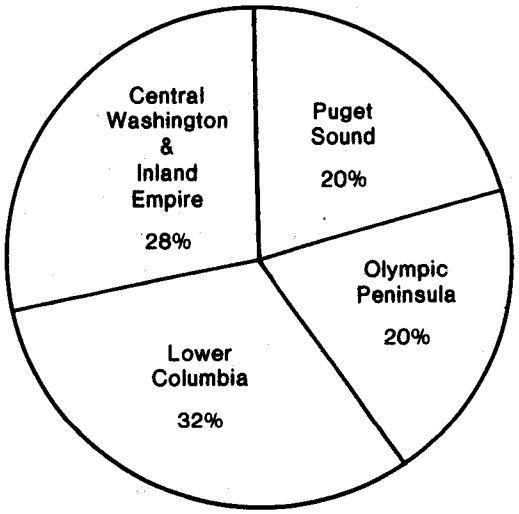
Veneer-only mills operated fewer days on the average with veneer and layup mills second. Averages for each mill type by Area are shown in Table 42.

## WOOD CONSUMPTION

### Raw Material

The Veneer and Plywood Industry consumed 332 million board feet of logs during 1982. Utility grade logs accounted for 5 percent of this volume (Table 2). Utility log consumption by Area varied from 11 percent in the Puget Sound Area to 2 percent in the Olympic Peninsula, Central Washington and Inland Empire Areas (Figure 10).

**Figure 10 Veneer and plywood log consumption by economic area**



## Roundwood Age

Timber more than 100 years old composed 55 percent of the logs used. Use of old growth varied from 32 percent in the Puget Sound Area to 64 percent in the Lower Columbia Area (Table 10).

## Ownership

Public lands were the source of 50 percent of logs consumed by the industry. National Forest lands were the greatest single source (Table 7). The Forest Industry lands contributed over 40 percent of the wood consumed. Although these two sources provided the majority of logs, other ownerships also contributed 14 percent.

| Ownership | | Logs supplied (Percent) |
|---|---|---|
| State | | 5 |
| National Forest | | 42 |
| Bureau of Land Management | | — |
| Other public | | 3 |
| Total public | | 50 |
| Forest Industry | Own wood supply | 31 |
| | Other wood supply | 13 |
| Farmer & Misc. private | | 6 |
| Total private | | 50 |
| All owners | | 100 |

The National Forests provided over half the volume consumed in the Lower Columbia Area. In Eastern Washington, Forest Industry provided 40 percent of the volume harvested from forest industry owned lands.

| Economic | Source of logs: National forest lands | Source of logs: Forest industry own wood supply |
|---|---|---|
| | (Percent) | |
| Puget Sound | 48 | 36 |
| Olympic Peninsula | 27 | 1 |
| Lower Columbia | 52 | 39 |
| Central Washington & Inland Empire | 35 | 40 |
| Total state | 42 | 31 |

Table 6 shows the dependency of individual mills on each ownership class. Ten mills were at least two-thirds dependent on public lands (with all but one dependent on National Forest Lands) while seven mills were similarly dependent on private lands.

## Species

Fifty-seven percent of the logs used by the industry were Douglas fir (Table 8). Second in importance was hemlock with 22 percent. The Lower Columbia Area used 66 percent Douglas fir and 26 percent hemlock. In Eastern Washingon, Douglas fir was the most widely used species accounting for 61 percent of the consumption. True firs followed with 19 percent. The Olympic Peninsula was the only Area to use western redcedar, which provided 9 percent of its consumption.

## Imports

Two Economic Areas acquired logs from outside the state, but these imports accounted for less than one percent of the industry's log consumption. The Lower Columbia Area imported the greater volume, but it accounted for less than 2 percent of its log consumption (Table 3).

## Veneer

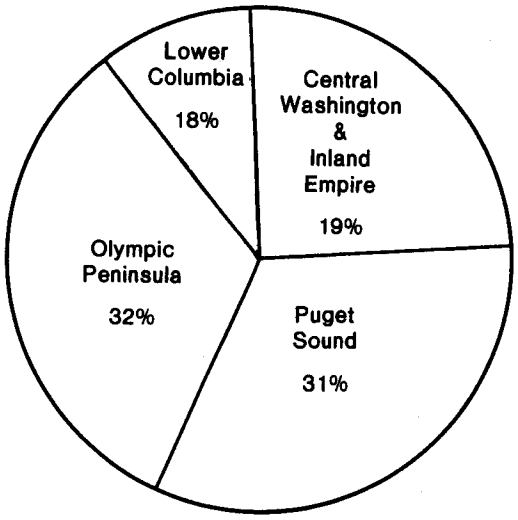
In addition to logs, the industry consumed 221,249,000 square feet of 3/8—inch veneer more than it produced for sale or transfer during 1982. Converted to Scribner log scale (at 2.5 square feet per board foot) this is equivalent to about 88 million board feet or 9 percent of the industry's total wood consumption. This veneer originated from inventory reductions or was imported from out-of-state.

## PRODUCTION

### Veneer and Plywood

During 1982, individual mills produced 1,264,343,000 square feet (3/8-inch basis) of plywood (Table 45). They also produced 435,950,000 feet (3/8-inch basis) of veneer that was sold or transferred to other mills.

**Figure 11 Plywood production by economic area**




### Residues

Residues that come from the manufacture of veneer and plywood amounted to 0.71 million tons and 98 percent of this volume was productively used (Table 9).

Wood residue accounted for 80 percent of all residues. Bark composed the remaining 20 percent. Three classifications of wood residues were identified: coarse (log trim, cores, round-up, veneer clip, spur trim); medium (panel trim, reject veneer); and fine (sander dust). These were over 98 percent used (Table 44).

| Residue type | Residue use | | | |
|---|---|---|---|---|
| | Pulp & board | Fuel | Other uses | unused |
| | (Percent) | | | |
| Cores | 50 | 1 | 49 | — |
| Coarse & medium (less cores) | 66 | 32 | — | 2 |
| Fine | — | 93 | — | 7 |
| All wood | 60 | 30 | 9 | 1 |
| Bark | — | 95 | 3 | 2 |
| All residue | 48 | 43 | 7 | 2 |

Production and disposition of residues by Economic Area is presented in Tables 9 and 44.

# PULP and BOARD INDUSTRY

## MILL CHARACTERISTICS

### Facilities

Each operation at a multiple plant facility is considered a separate mill. Twenty-one mills were identified: 6 sulfite, 7 sulfate, 4 groundwood and 4 semichemical. No board mills operated in 1982. Operations were located in 10 counties. Cowlitz County was the leading county with 5 mills. The leading Area was the Lower Columbia with 7 mills, followed by Puget Sound with 6 mills (Table 46).

### Production Capacity

Daily pulp production capacity was 12,348 tons. Of the 21 pulp mills, 13 were either sulfite or sulfate (62 percent). They accounted for 76 percent of the daily capacity (Table 47).

| Economic area | Percent of pulp capacity |
|---|---|
| Puget Sound | 23 |
| Olympic Peninsula | 20 |
| Lower Columbia | 49 |
| Inland Empire | 8 |
| Total state | 100 |

### Site and Ownership Tenure

Site occupancy by 20 of the 21 mills has been for over 10 years. For 19 mills it has been for more than 20 years (Table 48). Twenty of the mills have been in the present ownership for over 10 years, and 15 of the mills has been held by a single owner for over 20 years.

### Operating Days

The average number of operating days per year for pulp mills decreased between 1980 and 1982 to 314 days (Table 49).

| Economic area | Average number of operating days |
|---|---|
| | Pulp |
| Puget Sound | 315 |
| Olympic Peninsula | 315 |
| Lower Columbia | 314 |
| Inland Empire | 309 |
| Total state | 314 |

## WOOD CONSUMPTION

### Raw Material

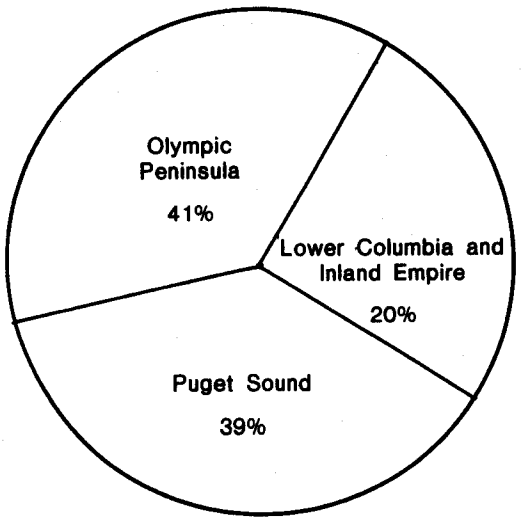
The industry consumed 512 million board feet of roundwood and 5.5 million bone dry tons of chips, sawdust, shavings and wastepaper (Table 51). In total this is the equivalent of approximately 6.6 million bone dry tons of wood. Eighty-four percent of the raw material consumed by the industry was in the form of chips and other residues with the balance roundwood. The percent of consumption in each area was:

| Economic area | Chips from mill residue | Roundwood |
|---|---|---|
| | (Percent) | |
| Puget Sound | 58 | 21 |
| Olympic Peninsula | 36 | 33 |
| Lower Columbia & Inland Empire† | 66 | 6 |
| Total state | 57 | 16 |
| Million bone dry tons | 3.8 | 1.0 |

†Combined to avoid disclosure

The Pulp and Board Industry was the largest user of utility grade (cull) logs, accounting for nearly two-thirds of all utility logs consumed in 1982 (Table 2). Within this industry, utility logs accounted for 81 percent of roundwood consumed (Table 51).

**Figure 12 Percent of roundwood consumed by economic area**



## Roundwood Age

Table 10 shows roundwood consumption by age class for each Economic Area. For the Pulp and Board Industry statewide, old growth timber accounted for 50 percent of the roundwood consumed. This is 7 percent lower than in 1980.

## Ownership

Private timber holdings supplied 71 percent of the total roundwood consumed (Table 7).

| Ownership | | Log supply (Percent) |
|---|---|---|
| State | | 6 |
| National Forest | | 18 |
| Bureau of Land Management | | 3 |
| Other public | | 2 |
| Total public | | 29 |
| Forest Industry | Own wood supply | 48 |
| | Other wood supply | 16 |
| Farmer & Misc. private | | 7 |
| Total private | | 71 |
| All owners | | 100 |

One mill was more than two-thirds dependent on public timberlands. Four mills were more than two-thirds dependent on private timberlands for logs they used (Table 6).

## Species

Hemlock accounted for 60 percent of the industry's roundwood log consumption. The greatest volume of hemlock was harvested in the Olympic Peninsula Area (Table 52).

| Roundwood species consumed | Percent |
|---|---|
| Hemlock | 60 |
| Douglas fir | 15 |
| True firs | 12 |
| Hardwoods | 4 |
| Lodgepole pine | 3 |
| Spruce | 3 |
| Other softwoods | 3 |
| Total | 100 |

## Origin

Eighty-eight percent of roundwood consumed by the Pulp and Board Industry came from within the state. The remaining 12 percent was imported from Oregon, Idaho, British Columbia and elsewhere. Mills in the Lower Columbia Area imported 22 percent of their logs from Oregon (Table 3).

## Residues

Chips and other residues constituted the major sources of raw material for the industry (Table 51).

| Residue type | Total volume (Percent) |
|---|---|
| Chips | |
| Residue | 57 |
| Roundwood | 21 |
| Sawdust & shavings | 5 |
| Wastepaper | 1 |
| All types | 84 |
| Logs | 16 |
| Total | 100 |

# SHAKE and SHINGLE INDUSTRY

## MILL CHARACTERISTICS

There were 195 shake, shingle and hip, and ridge mills operating during 1982 which is a decline of 27 percent from 1980. Of the total, 66 percent (128) of the mills were located in the Olympic Peninsula Area. Of these, nearly half were in Grays Harbor County (Table 54).

The single shift capacity of Shake and Shingle Industry mills operating in 1982 was 16,224 squares. This is equivalent to approximately 1.6 million board feet Scribner log scale.

Sixty-nine mills used burners to dispose of wood residues. In contrast, 19 mills used chippers (Table 55).

Twenty-five percent of the mills have been operating at their present site for 5 years or less, while 36 percent have been under present ownership for 5 years or less. Forty-four percent of the mills operating in 1982 have been in their present location more than 10 years, but only 32 percent have been under present ownership for more than 10 years (Table 56).

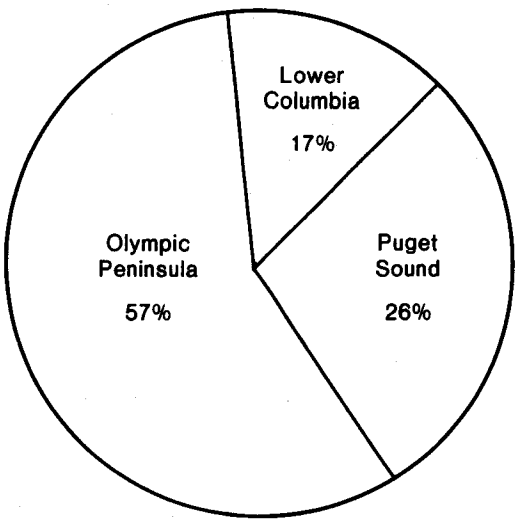
The number of mill operation days averaged 144 during 1982 (Table 54). This is a 3 percent increase from the average of 140 days in 1980.

## WOOD CONSUMPTION

Industry consumption during 1982 was 96 million board feet of logs and the equivalent of 24 million board feet in blocks, bolts and other material (Table 57). Of the total volume, sound logs accounted for 73 percent; utility grade (cull logs) accounted for 7 percent and other materials accounted for 20 percent.

Western redcedar is the most important species in Washington suitable for the manufacture of shakes and shingles. In the 1982 survey, western redcedar was used almost exclusively (Table 8). Product specifications further limit consumption. Ninety-six percent of the materials used were old growth (Table 10).

**Figure 13 Shake and shingle roundwood consumption by economic area**




Because of the species dependency, the industry obtained its log supply from many ownership classes (Table 58). However, 69 percent of the timber came from forest industry lands.

| Ownership | | Log supply (Percent) |
|---|---|---|
| State | | 8 |
| National Forest | | 14 |
| Bureau of Land Management | | <.5 |
| Other public | | 2 |
| Total public | | 24 |
| Forest Industry | Own wood supply | 11 |
| | Other wood supply | 58 |
| Farmer & Misc. private | | 7 |
| Total private | | 76 |
| All owners | | 100 |

During 1982, about 57 percent of the individual mills obtained more than two-thirds of their log supply from a single ownership class: 26 mills from public sources, 85 from private sources (Table 6).

Ninety-seven percent of the industry's log consumption came from Washington. Most of the rest came from

British Columbia, with a small amount from Oregon and others (Table 3).

## PRODUCTION AND RESIDUES

Production amounted to 1,553,394 squares: 71 percent were shakes, 26 percent were shingles and 3 percent were hip, ridge, shims and others (Table 62). This production resulted in 125,241 bone dry tons of residues, composed of 72 percent wood and 28 percent bark (Table 59). When use of residues is considered, only 59 percent were used: 59 percent of wood residues and 59 percent of bark. The Lower Columbia Area mills are a notable exception to the state average with 99.9 percent of the residues being used.

Wood residues are divided into two size classes. Coarse materials accounted for 38 percent of the total and fine materials accounted for 62 percent (Table 60). However, 59 percent of coarse wood residues and 59 percent of the fine wood residues were used.

For many mills it is not economical to recover residues. Low product volume of the mill operation probably is the major factor. Also, some of the residues produced by this sector are left in the woods rather than produced at mill sites. This occurs when mills use blocks, bolts or boards as a raw material, instead of logs.

| Use | Residue type & distribution | | |
|---|---|---|---|
| | Course | Fine | Bark |
| | (Percent) | | |
| Pulp & board | 12 | 6 | 6 |
| Fuel | 40 | 46 | 48 |
| Other | 7 | 7 | 5 |
| Unused | 41 | 41 | 41 |
| All | 100 | 100 | 100 |

# POLE, POST and PILING INDUSTRY

## INDUSTRY CHARACTERISTICS

The smallest segment of the forest products industry (13 mills) had 77 percent of its operations located in Western Washington.

The reported annual peeling capacity for 1982 was 54 million board feet, coupled with 42 million board feet treatment capacity (Table 63). This industry rarely uses the board foot unit of measure. However, data for this report have been converted to board foot units for comparison.

All operations had either a barker or a peeler which was essential for preparing the products (Table 65). Of the 13 mills, 9 had facilities for treating wood. One mill reported using water-borne salts treatment. Others used pentachlorophenol with different carriers and/or cresote.

From 1980 to 1982 the Pole, Post and Piling Industry declined by 8 operations. This nearly 40 percent decline resulted in a more concentrated industry since peeling capacity increased 16 percent. Of the 1982 mills, 77 percent of the operations have been under the same ownership more than 10 years (Table 64).

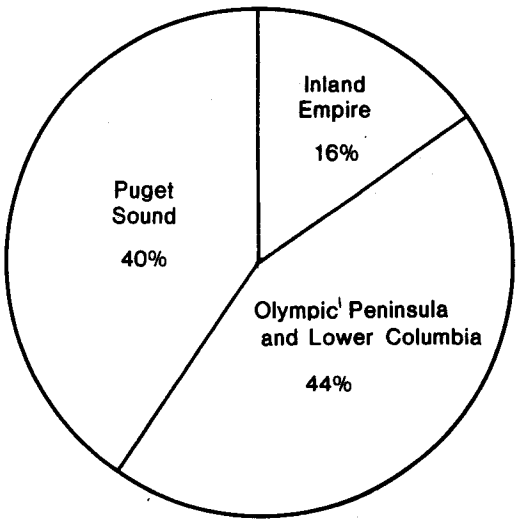
The industry averaged 142 days of peeling operation. Treatment facilities operated an average of 209 days (Table 63).

## WOOD CONSUMPTION

Total wood consumption during 1982 was 17,025,000 board feet with sound logs accounting for 93 percent of all log consumption (Table 2). Post volume has been classified as utility logs and accounts for 7 percent of total volume.

The Pole, Post and Piling Sector is oriented primarily to young growth timber. In 1982, 83 percent of logs consumed were classified as young growth (Table 10).

**Figure 14 Pole, post and piling wood consumption by economic area**




Nearly 70 percent of the mills (9 mills) were over two-thirds dependent on a single owner class for their log supplies (Table 6). This included one operation dependent on Public Timber, 5 operations dependent on Forest Industry timber and 3 operations dependent on other private timber.

| Ownership | | Log supply (Percent) |
|---|---|---|
| State | | 16 |
| National Forest | | 3 |
| Other public | | 1 |
| Total public | | 20 |
| Forest Industry | Own wood supply | 6 |
| | Other wood supply | 37 |
| Farmer & Misc. private | | 37 |
| Total private | | 80 |
| All owners | | 100 |

Douglas fir and western redcedar, used principally for poles and piling, accounted for 85 percent of the total log consumption (Table 8). These two species are well suited for pole and piling uses because they possess the needed strength and durability.

Washington timberlands supplied 96 percent of the industry's needs with nearly 4 percent coming from Oregon. The remaining less than 0.5 percent came from the "other" origin category (Table 3).

# LOG EXPORT INDUSTRY

## INDUSTRY CHARACTERISTICS

The 124 log export operations reported in this survey represent trading companies, log brokers or other firms who ship logs from nine public port areas in the state. Please note that each port used by a firm is considered a separate operation. Fifty-nine operations were located in the Puget Sound Area followed by the Olympic Peninsula Area with 39 (Table 68).

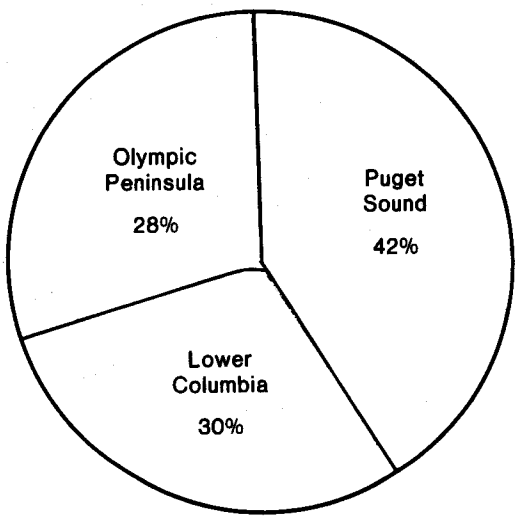
Sixty-nine percent of the operations have used the present site for over 5 years (Table 69).

Since ports handle a variety of materials, the Log Export Industry's average days of operation and production capacity cannot be meaningfully quantified.

## LOG CONSUMPTION

Export shipments totaled 2.1 billion board feet in 1982, making the Export Industry the largest log consumer in Washington for the first time (Table 3). The Export Industry's log consumption is considered to be equivalent to log export shipments for the year 1982.

**Figure 15 Log export by economic area**




Most logs exported were sound. Less than 0.5 percent of the export volume was utility grade logs (Table 2).

| Ownership | Log supply (Percent) |
|---|---|
| State | 14 |
| National Forest | 1 |
| Other public | † |
| Total public | 15 |
| Forest Industry | 77 |
| Farmer & Misc. private | 8 |
| Total private | 85 |
| All owners | 100 |

†Less than 0.5 present

Sixty-seven percent of the operations were more than two-thirds dependent for supplies on a single ownership class. Sixty-nine of 124 operations were more than two-thirds dependent on Forest Industry lands, 5 on other private lands, 8 on state lands and one on National Forest lands (Table 6).

Log export operations consumed more Douglas fir, hemlock and spruce than any other industry (Table 8). Of the logs exported, Douglas fir ranked first with over half the volume, followed by hemlock with nearly 40 percent.

| Species | Log supply (Percent) |
|---|---|
| Douglas fir | 56 |
| Hemlock | 38 |
| True firs | 2 |
| Western redcedar | 2 |
| Spruce | 1 |
| All others | 1 |
| Total all species | 100 |

Washington timberlands supplied 96 percent of logs exported from the state (Table 3). Those logs originating in Oregon and British Columbia were primarily moved through the Lower Columbia and Puget Sound Areas, respectively.

# HARDWOOD INDUSTRY

NOTE: The following information was extracted from the data in previous sections and is included here for your convenience.

## INTRODUCTION

Processing hardwoods is another segment of the Washington wood products industry. Many different species, including alder, maple and cottonwood are processed by sawmills, veneer and plywood mills, and pulp mills. Finished products are shipped throughout the United States for use in furniture, other specialty products and pulp. The market for hardwood chips is also growing in Washington as well as abroad.

## INDUSTRY CHARACTERISTICS

In 1982, there were 11 sawmills, one veneer and plywood operation, and 2 pulp mills using hardwoods for over 90 percent of their log or chip consumption. Mills using hardwood were located in the following counties:

| | Sawmills | | Veneer & plywood | | Pulp | |
|---|---|---|---|---|---|---|
| | Number of mills and dependency on hardwood | | | | | |
| County | Under 90% | 90% + | Under 90% | 90% + | Under 90% | 90% + |
| Clallam | 1 | — | — | — | 1 | — |
| Clark | 3 | — | — | — | — | — |
| Cowlitz | 1 | 1 | — | — | 1 | 1 |
| Grays Harbor | — | 1 | — | — | 2 | — |
| Jefferson | 1 | — | — | — | 1 | — |
| King | 2 | — | — | — | — | — |
| Kittitas | — | — | — | — | — | — |
| Lewis | 1 | 3 | 1 | — | — | — |
| Mason | — | 1 | — | — | — | — |
| Okanogan | — | — | — | — | — | — |
| Pacific | — | 1 | — | — | — | — |
| Pierce | 1 | — | 1 | — | 1 | — |
| Skagit | — | 1 | — | — | — | — |
| Snohomish | 1 | 3 | — | 1 | 2 | — |
| Spokane | 1 | — | — | — | — | — |
| Thurston | — | — | — | — | — | — |
| Walla Walla | 1 | — | — | — | — | — |
| Whatcom | 1 | — | — | — | — | 1 |
| Total | 14 | 11 | 2 | 1 | 8 | 2 |

Twelve Washington sawmills were dependent upon hardwoods for at least two-thirds of their consumption.

## WOOD CONSUMPTION

Hardwood log consumption by mills in 1982 was 183,193,000 board feet Scribner (Table 8). This is a 20 percent decline in volume from 1980. However,76,134 bone dry tons of hardwood chips from roundwood were consumed by the Pulp Industry. This was more than a 30 percent increase from 1980 to 1982.

| Industry | Hardwood log consumption (Percent) |
|---|---|
| Sawmills | 80 |
| Pulp & Board | 13 |
| Veneer & Plywood | 5 |
| Export | 2 |
| Total industry | 100 |

In 1982, 146,668,000 board feet of hardwoods were consumed by sawmills. This was almost 7 percent of their all-species consumption and was a slight volume increase over 1980. Of this amount, 98 percent of hardwood volume consumed was by those sawmills more than two-thirds dependent on hardwoods. Nearly 60 percent of these mills were size-class D mills. However, size-class B mills consumed 54 percent of the hardwood volume (Table 25).

The Veneer and Plywood Industry consumed 9,040,000 feet of Western hardwoods or 3 percent of their total log consumption (Table 8). This was less than half the hardwood volume consumed in 1980.

The Pulp Industry used 22,944,000 board feet of hardwood logs in 1982 (4 percent of their all-species log consumption). This was a decrease of 49 percent from their 1980 hardwood log consumption. In addition, this industry consumed 89,494 bone dry tons of chips from hardwood roundwood (Table 52). This chip consumption represented a 54 percent increase since 1980. Apparently the Pulp Industry is buying chips in the open market rather than buying logs and then chipping them.

## HARDWOOD SUPPLY

Lewis, Pacific and Snohomish counties accounted for nearly half the hardwood supplied to sawmills 90 percent + dependent upon hardwoods in 1982. Of the 144,104,000 board feet consumed by these mills in 1982, the following counties supplied the following percents (based on a proportional distribution):

| County | Percent |
|---|---|
| Lewis | 25 |
| Snohomish | 13 |
| Pacific | 10 |
| King, Kitsap & Island | 10 |
| Skagit and Whatcom | 9 |
| Grays Harbor | 8 |
| Cowlitz | 7 |
| Wahkiakum | 4 |
| Mason | 4 |
| Clallam & Jefferson | 2 |
| Thurston | 2 |
| Out-of-state | 6 |
| Total | 100 |

## OWNERSHIP

The hardwood consumed by sawmills 90 percent + dependent on hardwoods came largely from private ownership. It is apparent from the data that hardwood mills tend to be very specialized. This is reflected by the fact that 60 percent of the volume came from other forest industry wood supply.

**Sawmill Hardwood Log Consumption**
**Mills 90%+ Dependent on Hardwoods**

| Ownership | | Volume MBF (Scribner) | Log supply (Percent) |
|---|---|---|---|
| State | | 9,207 | 6 |
| National Forest | | 0 | 0 |
| Other public | | 23 | † |
| Total public | | 9,230 | 6 |
| Forest Industry | Own wood supply | 9,490 | 7 |
| | Other wood supply | 85,986 | 60 |
| Farmer and Misc. private | | 39,398 | 27 |
| Total private | | 134,934 | 94 |
| All owners | | 144,104 | 100 |

†Less than 0.05 percent

## HARDWOOD HARVEST

The State of Washington Department of Natural Resouces "Timber Harvest Report" lists the following hardwood harvest information for 1982:

| Species | 1982 harvest MBF, Scribner | Species (Percent) |
|---|---|---|
| Red Alder | 109,768 | 45 |
| Other species | 56,135 | 23 |
| Cull & utility | 76,915 | 32 |
| Total | 242,818 | 100 |

Of the above total, 1,049,000 board feet were harvested in Eastern Washington. This is less than 0.5 percent of the statewide hardwood harvest.